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new matter has been added and no new issues have been raised by the present response.

Reconsideration is respectfully requested of the rejection of claims 1-7 under 35 U.S.C. § 102(e), as allegedly being anticipated by U.S. Patent No. 6,111,857 to Soliman et al.

Applicants have carefully considered the comments of the Office Action and the cited reference, and respectfully submit that claims 1-7 are patentably distinct over the cited reference for at least the following reasons.

The present invention relates to a method for automatically designing cellular mobile radio telephone networks. A design of a cellular mobile radio telephone network or subnetwork for a new planning area is automatically generated using available planning data for existing, planned, or abstract cellular mobile radio telephone networks and the space-related data of their planning areas and the space-related data of the new planning area. Relationships between the space-related reference and planning data are processed, and coordinate and angle transformations are applied to the site coordinates of the base stations and main beam directions of antennae of the base stations of the reference data.

Soliman et al., as understood by Applicants, relates to a method and apparatus for planning a wireless telecommuni-

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cations network. An electronic representation of a wireless telecommunications system can be configured within a given market area and the operation of the telecommunications system simulated. The simulation is performed using a set of databases that contain terrain and population information associated with the market area over which the wireless network is configured.

To perform the simulation, Soliman et al. discloses generation of a composite propagation loss matrix and a demand and service vector using the terrain and population information, as well as the configuration of the wireless telecommunications network. Once the composite propagation loss matrix and the demand and service vector are generated, analyses of the reverse link and of the forward link are performed. During both the reverse and forward link analyses multiple iterations are performed until a stable result is achieved. Upon completion of the reverse and forward link analyses, the results of the simulation are displayed in a graphical manner for examination.

The Office Action states that Soliman et al. teaches, inter alia, a method for automatically designing cellular mobile radio telephone networks from network-related reference data including existing planning data of implemented, planned, or abstract cellular networks (see Office Action, p. 2, lns.

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14-23). Applicants respectfully disagree.

As understood by Applicants, Soliman et al. discloses the use of a computer and display screen to store, process, and display data for performing planning of wireless networks (see Soliman et al., col. 5, lns. 11-59; Figs. 1-2). The geographic and environmental information may include altitude and terrain information associated with an evenly-spread set of x-y coordinates, referred to as "bins" (see id., lns. 64-67; col. 7, lns. 13-29). Additionally, the data include an electronic representation of the layout of a wireless telephone system (see id., col. 6, lns. 1-2).

The environmental information of Soliman et al., as understood by Applicants, is displayed on the display screen of the computer to form a graphical representation of the terrain of the simulation area (see id., lns. 20-59; Fig. 3). Simulation parameters may be entered by a user via a menu bar and dialog boxes, and base stations may be located and moved on the display screen through use of a mouse and cursor (see id.).

The simulation is performed by the computer and includes generation of a propagation loss array, initialization of a demand and service vector, and performance of reverse and forward link analyses (see id., col. 7, lns. 13-64; Fig. 4). After the base stations have been located, the simulation is

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performed and the results displayed on the display screen in various formats (see id., col. 6, lns. 59-65; col. 8, lns. 2-5).

In the section of the Office Action cited above and in the section entitled "Response to Arguments," the Office Action cites col. 5, lns. 60-64 of Soliman et al. as allegedly disclosing reference data including existing planning data of implemented, planned, or abstract networks or subnetworks.

The cited section of Soliman et al. states: "[t]he data stored in non-volatile memory includes an electronic representation of the geographic and other environmental information about a specific market area over which simulation of the operation of a wireless telecommunications system is to be performed" (see id., col. 5, lns. 60-64) (emphasis supplied).

That is, as understood by Applicants, the geographic and other environmental information utilized by Soliman et al. consists of data regarding the area over which the simulation is to be performed. Geographic and other environmental information, such as population information, of the area over which a network is proposed is necessary to the planning of a wireless network.

As understood by Applicants, the information described above and disclosed by Soliman et al. relates to the terrain

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over which the network is planned, i.e., the proposed network area, and does not include previously existing planning data information regarding an implemented or planned wireless network.

In contrast, in the present invention, a design of a cellular mobile radio telephone network or subnetwork for a new planning area is automatically generated from previously-produced planning data of implemented, planned, or abstract cellular mobile radio telephone networks, the space-related data of their planning areas, and the space-related data of the new planning area, by processing relations between the space-related reference data and the space-related data of the new planning area, and by applying coordinate transformations to the site coordinates of the base stations and main beam directions of antennas of base stations of the reference data (see specification of the present application, p. 5, lns. 3-15).

That is, in the present invention, in planning a new telecommunications network, space-related and network-related data of another, already-planned communications network are used (see id., p. 10, ln. 10 to p. 11, ln. 26).

The present invention may utilize an assumption that geographic areas having identical or very similar space-related features can be supplied by mobile radio telephone.

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networks or subnetworks which are identical or very similar apart from space-related parameters such as coordinates of base stations and main beam directions of antennas, and that therefore two geographic areas having identical space-related features can be represented by identical space-related data contents which can be processed by machine (see id., p. 9, lns. 4-13).

These features may be used, for example, to transform an existing base station allocation of a previously-planned area in order to determine an allocation of a new planning area (see id., p. 10, lns. 10-16).

As understood by Applicants, Soliman et al. is silent regarding the use of an existing cellular network layout, and discloses only that the space-related data of the new planning area are used for performing the simulation.

Furthermore, as understood by Applicants, the system of Soliman et al. relies upon manual location and movement of elements of the simulated network, such as base stations (see Soliman et al., col. 6, lns. 46-59). Base stations may be placed, moved, and oriented within the simulation by manipulation of a mouse, selection button, and/or keyboard (see id.). Network simulation is performed after the base station locations have been manually determined, as described above (see id., lns. 59-65).

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In contrast, in the present invention, design of the cellular mobile radio telephone network or subnetwork for the new planning area is automatically generated by processing relationships between the space-related reference and the space-related data of the new planning area. Operations are performed which implement conversions from the state of the previously-produced network or subnetwork into the state of design for a new planning area (see specification of the present application, p. 12, lns. 8-11).

The conversion operations of the present invention may include, inter alia, feature calculation of space-related reference and planning data which are represented as one- or multi-dimensional features or parameters, or mapping of sites of base stations of the reference area onto the planning area by coordinate transformation of the base station sites into geographical longitude, latitude, and rotation related to the zero meridian (see id., lns. 14-26).

It is therefore respectfully submitted that Soliman et al. does not disclose or suggest a method for automatically designing cellular mobile radio telephone networks, wherein, from existing planning data of implemented, planned or abstract cellular mobile radio telephone networks or subnetworks and the space-related data of their planning areas, including network-related and space-related reference

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data, and the space-related data of a new planning area, a design of the cellular mobile radio telephone network or subnetwork for the new planning area is automatically generated by processing the relationships between the space-related reference and the space-related data of the new planning area and application of coordinate and angle transformations to the site coordinates of the base stations and main beam directions of the antennas of the base stations of the reference data, as recited in independent claim 1.

Accordingly, for at least the above-stated reasons, it is respectfully submitted that independent claim 1, and the claims depending therefrom, are patentable over the cited reference. Independent claim 7 is believed to be patentable over the cited reference for at least similar reasons.

Withdrawal of the rejection of claims 1-7 is respectfully requested.

Should the Examiner disagree, it is respectfully requested that the Examiner specify where in the cited document there is a basis for such disagreement.


Entry of this response is earnestly solicited, and it is respectfully submitted that this response raises no new issues requiring further consideration and/or search, as the above remarks merely serve to clarify and illustrate the functional aspects of the present invention.

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The Office is hereby authorized to charge any fees which may be required in connection with this response and to credit any overpayment to Deposit Account No. 03-3125.

Favorable reconsideration is earnestly solicited.

Respectfully Submitted,



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